

Tunable and Switchable Ionic Liquid–Nano Hybrids

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The integration of chemical units of pre-designed chemical function such as recognition sites, redox groups, or chromophore units, may yield hybrid systems combining the unique features of nano-sized materials with the tailored properties of the molecular or macromolecular coatings. Hybridization of organic molecules bearing characteristic properties with nano-sized materials is an especially attractive target, as it can improve the physicochemical properties of the nanosized materials, and create new materials possessing the unique properties, which are not appeared in the parent materials. In this context, ionic liquids (ILs) could be attractive target molecules. ILs are organic molten salts and are made up of two components *i.e.* the anion and cation. As both anion and cation can be varied, these materials can be designed for a particular set of properties such as solubility, density, refractive index, and viscosity. The favorable and readily tunable physicochemical properties of ILs have led to intense interest in these materials as alternatives to conventional organic solvents. However, no extensive studies on the hybridization of ILs with nanomaterials have been made. In this seminar, our recent studies on the ionic liquid–nano hybrid will be presented.